Mystic River Watershed Steering Committee
Meeting Focus: Reports from USGS's StreamStats project and MWRA's CSO work
June 3, 2021
Held online via Zoom

Meeting Summary

Meeting in Brief
This meeting consisted of three presentations: a description of updates to the StreamStats tool in the Mystic watershed from USGS, a report on progress on CSO control from MWRA, and a report-back from a series of webinars focused on trash reduction from the Mystic River Watershed Association. Slides from MWRA and MyRWA's presentations are available at mysticriver.org/epa-steering-committee. A list of meeting participants can be found at the end of this document. For more information about the steering committee and current efforts to restore the Mystic River watershed, please visit www.epa.gov/mysticriver.

Next Meeting
The next meeting is scheduled for Thursday, September 9 at 10am. This meeting will likely be virtual, but details will be announced closer to the date.

Integrating stormwater drainage into the USGS's StreamStats application for the Mystic River Watershed
Alana Spaetze, Hydrologist, USGS
Pete Steeves, GIS Specialist, USGS
Jay Corey, City Engineer, City of Woburn
Slides from this presentation are considered preliminary and can not be shared publicly. However, feel free to contact our presenters with any questions: aspaetzel@usgs.gov and psteeves@usgs.gov.

- Stakeholders in the Mystic River basin are addressing challenge related to stormwater, including bacteria, flooding, nutrient loading, climate resiliency, and others. These also must be tracked for MS4 permit requirements.
- USGS is supporting all of this work by integrating stormwater infrastructure information and higher resolution data into the StreamStats tool, which currently relies on topographic data. This allows for improved contributing area delineation.
- This project has been a joint project with USGS and the Urban Waters program, and has also been supported by EPA Region 1.
- StreamStats is a geospatial web app that allows users to delineate drainage areas, compute basin characteristics, and generate flow statistics. It is publicly available.
- This StreamStats enhancement will include the entire Mystic River basin; so far, 19 municipalities have provided storm drain data for the project. The pilot area, where StreamStats has already been updated, is a small area including parts of Woburn, Wilmington, and Reading.
- StreamStats relies on geometric network functionality, which allows users to see everything that contributes flow to a given point.
- The updated maps include pipes, inlets, and surface drainageways. Including stormwater data in the delineations yields much more accurate information about flows than elevation information alone.

- This project in the Mystic is only the second like this for USGS; the first was in St. Louis. The historic nature of the Boston area makes the drainage in this area especially complex, with old infrastructure, the former route of the Middlesex Canal, etc.
- An outstanding question is how to determine flow statistics in an urban area that doesn't have a lot of streamgages (compared to a less urban location).
- Jay Corey from Woburn spoke about the many uses of StreamStats for city engineers and noted that the updates make it even more valuable. He also noted that cities need to improve their own data sets to support efforts like these. (The better the data that goes to USGS, the more efficiently and accurately they can update StreamStats.)

Q: What are some examples of the practical applications of this tool for municipalities?
A: This is a really high resolution data set and allows municipalities to easily delineate drainage areas to catch basins. This makes MS4 reporting much quicker and simpler for tasks that could otherwise be very cumbersome (and which municipalities might otherwise have to hire a consultant to do). Once land use types are added to the tool, municipalities can also easily calculate phosphorus loading from different land use types based on calculations done by EPA. The tool can also help with elicit discharge detection. The tool will also allow users to separate flows from pipes from surface flows, which is needed to calculate flow statistics.

Q: How does groundwater infiltration play into this model?
A: USGS is just starting to look into incorporate groundwater contributing areas to a click point, which is especially important in some regions, such as Cape Cod. Currently, it only factors in through certain basin characteristics, such as area of sand and gravel.

Q: From the EPA perspective, what are the benefits of this update?
A: This tool allows EPA to do more efficient, useful sampling and improves the mapping of stormwater systems.

Comment: This could be valuable to identify sources of flooding as well.

Comment: This project is missing data from state-owned roads and other state infrastructure. Theresa McGovern from VHB noted in the chat that MassDOT is working on their mapping, and she can help connect that project with this effort.

EPA was able to make a contribution to this project, but additional funding is needed, so other agencies are encouraged to consider whether there are ways they can support this work.

MWRA's Combined Sewer Overflow Control Program in the Mystic
Betsy Reilley and Brian Kubaska, MWRA
The slides from this presentation can be viewed at mysticriver.org/epa-steering-committee.

- MWRA began doing post-construction monitoring and assessment of 35 CSO control projects in the Boston area in 2017. MWRA is determining whether Long Term Control Plan goals have been met for various CSO outfalls and tracks data (such as verifying that most outfalls are truly eliminated, frequency of overflows, water quality data, remaining impacts from CSOs). All active CSOs are metered by MWRA or the CSO communities and modeling is used to verify the effectiveness of controls.

- CSOs are effectively eliminated at 40 of 86 identified CSOs from the late 1980s. Details of specific outfalls can be found in the presentation slides.
- MWRA data confirms that CSO volumes have been reduced by 87% since the late 1980s.
- MWRA issues semiannual progress reports on this work, with the most recent released in April 2021. These can be found at https://www.mwra.com/cso/pcmapa.html.
- Detail about each outfall location is available, including which are forecasted to meet Long Term Control Plan goals this year and which are not. Of the 46 active discharge locations, 30 currently attain or will attain these goals by December 2021, 6 are forecasted to meet the goals after December 2021 and have projects in progress, and 10 do not yet meet the goals and are actively being investigated by MWRA.
- Many projects have been undertaken to meet or move CSO performance closer to these goals, including major sewer separation projects, major facility construction projects and smaller construction efforts. Details about some of these projects can be seen in the slides.
- MWRA has implemented a real-time CSO notification system, and anyone can sign up for these at mwra.com. Cambridge and Somerville have similar systems. There are also informational signs that have been installed. Sign up for MWRA's notifications at https://www.mwra.com/updates/everbridge/join.html. Sign up for Cambridge's notifications at https://lp.constantcontactpages.com/su/4EC9xSG.
- Water quality is tracked differently in variance areas versus non-variance areas. Details about water quality in various areas can be found in the slides.
- For each area, MWRA calculates the percentage of time when water quality is in compliance with standards.
- In the variance areas, the model shows spikes in E. coli when stormwater and CSOs are active. The elevated bacteria levels can be tracked as they move downstream through the model domain. The models can also separate out the impacts of CSO only (versus other sources).
- MWRA has updated, calibrated, and run water quality models and will be conducting additional simulations and other runs of the model to improve their understanding of impacts on water quality. Full reports and more details can be found at mwra.com. https://www.mwra.com/harbor/enquad/trlist.html and https://www.mwra.com/harbor/enquad/trlist.html
- There will be a final report released in December 31, 2021.

Q: How are the 3 phases of sewer separation work in East Boston as shown on the slides impacting CSOs that are not close to these areas (specifically asked about BOS014)?
A: CSO improvements to meet LTCP goals at BOS014 are being performed in addition to the Phase 3 sewer separation work shown on the slide map. This work being designed by BWSC with financial support for construction by MWRA will include connection relief from the CSO regulator within the BOS014 CSO system.

Trash-Free Mystic webinar series: report and next steps
Andy Hrycyna, MyRWA
The slides from this presentation can be viewed at mysticriver.org/epa-steering-committee

- This spring, MyRWA organized a webinar series focused on trash reduction with support from EPA Region 1 and the Consensus Building Institute. Materials from the webinars are available at https://mysticriver.org/calendar/2021/4/14/trash-reduction-amp-capture-webinar-97d3y.

- The webinars focused on structural solutions, non-structural practices and policies, and a brainstorming session for local next steps, with presenters from EPA, DEP, DCR, and others reporting on regional efforts to reduce trash pollution.
- Participants included EPA and DEP, municipal officials, environmental nonprofits
- In Washington DC, it's possible to see a measurable reduction in trash in waterways since a trash TMDL was implemented. In DC, removing trash on land has the greatest impact on reduction in the waterway.
- Other strategies discussed include inlet guards for catch basins, street sweeping, source reduction (ie working with restaurants to reduce use of disposable items, installing hydration stations in parks to limit plastic water bottle use).
- Takeaways: no silver bullet; source reduction is the gold standard; any structural solution will need to be paired with nonstructural best practices.
- Next steps: form subcommittees to draft project proposals for fundable projects. Will also explore environmental justice impacts.

Announcements, Updates, and Funding Opportunities
- The Coordinating Team for this group will meet over the summer to the plan the September quarterly meeting agenda; please share any ideas or requests with them.
- This is Darya Mattes's last Steering Committee meeting in the Ambassador role, as she is moving on to a new job in mid-June. EPA will be exploring next steps for the Ambassador role in the Mystic.
- EPA is establishing a new CSO and stormwater branch program through the clean water state revolving fund. There will be $67 million available nationally, including sub-grants to states to be allocated to municipalities with a focus on disadvantaged communities.
- EPA Region 1 is working on the 2020 Mystic report card and there will be announcement about this in the coming weeks.
- Medford is close to launching an adopt-a-stormdrain program. They are in conversation with MyRWA about expanding this watershed-wide if it's successful in Medford.
- Medford is launching its first comprehensive planning process in a long. First meeting will take place on Wednesday, June 9 at 6pm. Learn more at https://www.facebook.com/events/487282995933207.

Wrap Up and Next Steps
Upcoming Mystic Steering Committee meetings:
- September 9
- December 2

Meeting Attendees

Name	Affiliation
Alana Spaetzel	USGS
Alex Rozycki	Town of Reading
Alicia Hunt	City of Medford
Andy Hrycyna	Mystic River Watershed Association
Betsy Reilley	MWRA
Brian Kubaska	MWRA
Bryan Manter	Town of Winchester
Caitlyn Whittle	EPA Region 1
Catherine Pedemonti	Mystic River Watershed Association
Catherine Woodbury	City of Cambridge
Chris Goodwin	MWRA
Darya Mattes	Urban Waters ambassador, Groundwork Somerville
David Butler	MassDEP
Erica Kyzmir-McKeon	Conservation Law Foundation
Emily Sullivan	Town of Arlington
Hillary Monahan	MWRA
Ivy Mlsna	EPA Region 1
Jay Corey	City of Woburn
Jennifer Letourneau	City of Cambridge
Jesse Caldwell	Conservation Law Foundation
John Kilborn	EPA Region 1
John Walkey	GreenRoots
Karen Mullins	Town of Lexington
Kathy Vandiver	MIT/Malden Riverworks
Laura Schifman	MassDEP
Lealdon Langley	MassDEP
Leo Olsen	Empower East Boston
Lise Marx	MWRA
Maria Brodine	Groundwork USA
Matthew Schuman	Town of Watertown
Mel Coté	EPA Region 1
Michael Sprague	Town of Lexington
Michael Woods	Town of Wilmington
Nancy Hammett	MA Rivers Alliance
Patrick Herron	Mystic River Watershed Association
Pete Steeves	USGS
Paul Barlow	USGS
Robert Lowell	DCR
Shavaun Callahan	City of Chelsea
Stephen Perkins	MyRWA volunteer
Theresa McGovern	VHB
Todd Borci	EPA Region 1
Tony Rodolakis	Wood Environment and Infrastructure Solutions
Wayne Chouinard	Town of Arlington
William Copithorne	Town of Arlington

For questions regarding this meeting summary, please contact Caitlyn Whittle (whittle.caitlyn@epa.gov).